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## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

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|--------------------------------------------------------------------------|--------------------------------------------------------------|
| Date of mailing (day/month/year)<br>25 June 1999 (25.06.99)              |                                                              |
| International application No.<br>PCT/US98/23055                          | Applicant's or agent's file reference                        |
| International filing date (day/month/year)<br>30 October 1998 (30.10.98) | Priority date (day/month/year)<br>30 October 1997 (30.10.97) |
| Applicant<br>KING, Christopher, R.                                       |                                                              |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

14 May 1999 (14.05.99)

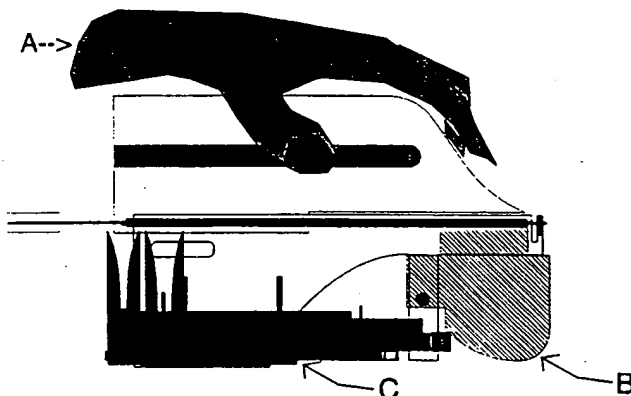
☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

|                                                                                               |                                  |
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| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland | Authorized officer<br>C. Carrié  |
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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>(51) International Patent Classification <sup>6</sup> :</b><br><br><b>A41G 3/00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>A3</b> | <b>(11) International Publication Number:</b> <b>WO 99/22694</b><br><br><b>(43) International Publication Date:</b> 14 May 1999 (14.05.99)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>(21) International Application Number:</b> PCT/US98/23055<br><br><b>(22) International Filing Date:</b> 30 October 1998 (30.10.98)<br><br><b>(30) Priority Data:</b><br>60/063,574                      30 October 1997 (30.10.97)                      US<br><br><b>(71)(72) Applicant and Inventor:</b> KING, Christopher, R. [US/US];<br>7508 Wood Court, Fishers, IN 46038 (US).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i><br><br><b>(88) Date of publication of the international search report:</b><br>12 August 1999 (12.08.99) |
| <b>(54) Title:</b> AUTOMATED HAIR ISOLATION AND PROCESSING SYSTEM<br><br><b>(57) Abstract</b><br><br>This invention is a device that isolates hairs into groups when run through hair on a human head such that they may be processed in various ways by attaching hair extensions, reshaping the cross-sectional diameters of individual hairs, precise cutting of the hairs, applying colorants, and applying permanent curling chemicals. The device includes a tensioning hair straightener (C) which allows the hairs to stand in a relatively perpendicular manner relative to the scalp during processing. Also various means (B) for preventing hairs from forming a build-up in front of the device as it is advanced through the hair are disclosed. The device can also be used for hair extension attachment, and removal. The hairs are detached and recycled so that they can be reattached later. Finally a means of manufacturing artificial hair extensions, and putting them into cartridges that can be used by the device are disclosed. |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/23055

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A41G 3/00

US CL :132/53, 56, 144, 201, 270

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 132/53, 56, 119.1, 124, 136, 143, 144, 201, 219, 212, 270, 901

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 4,108,186 A (ESPOSTO) 22 August 1978, entire document.                          | 1-3                   |
| X         | US 5,018,542 A (LEE) 28 May 1991, Figs. 8-10.                                      | 1-3                   |
| X         | US 3,903,903 A (MATSUMURA) 09 September 1975, col. 2 lines 1-40.                   | 1-4                   |
| X         | US 1,678,891 A (WALSH) 31 July 1928, page 3 line 106 to page 4 line 16.            | 12, 13                |
| X         | US 3,926,200 A (LOSENNO) 16 December 1975, figures.                                | 14, 15                |
| X         | US 4,385,638 A (HASEGAWA) 31 May 1983, Figs. 1 and 5.                              | 14, 15                |

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

|                                                                                                                                                                         |                                                                                                                                                                                                                                                  |
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| * Special categories of cited documents:                                                                                                                                | *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention                                              |
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Date of the actual completion of the international search

07 JUNE 1999

Date of mailing of the international search report

18 JUN 1999

Name and mailing address of the ISA/US  
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/23055

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 3,521,645 A (FRISHMAN, et al.) 28 July 1970, entire document.                   | 16                    |
| X         | JP 48-10817 A (KANEBO CO LTD) 07 April 1973, Abstract.                             | 17                    |
| A         | US 2,091,738 A (MOULIN) 31 August 1937, Figs. 1 and 2.                             | 1-4                   |
| A         | US 3,295,534 A (DORKIN) 03 January 1967, entire document.                          | 17                    |
| A         | US 5,107,867 A (BARRINGTON) 28 April 1992, entire document.                        | 17                    |

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/23055**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 5-11  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
  
Claims 5-11 appear to be both a product or machine, and a process. It is unclear how something can be both an apparatus, and a process. As such no meaningful search of an apparatus/process could be carried out.
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

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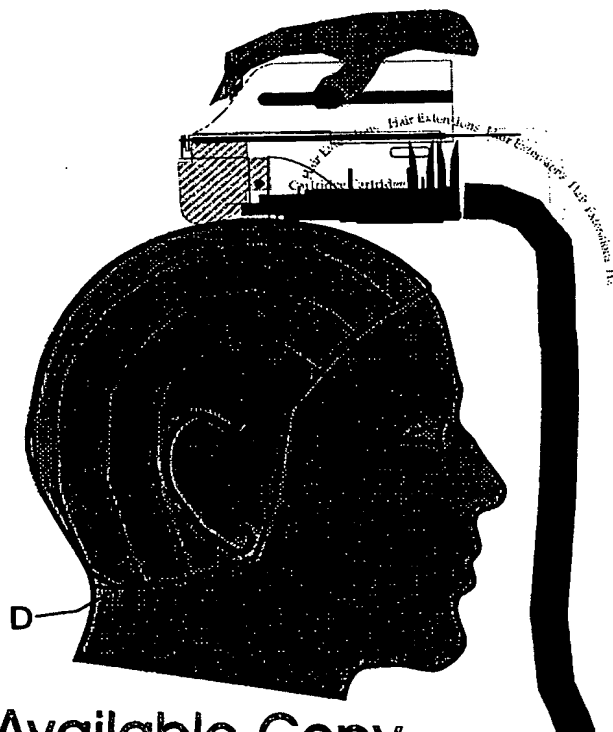
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (51) International Patent Classification <sup>6</sup> :<br><b>A61K</b>                                                                                                                                                                                                                                                     | <b>A2</b> | (11) International Publication Number: <b>WO 99/22694</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                            |           | (43) International Publication Date: 14 May 1999 (14.05.99)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p>(21) International Application Number: PCT/US98/23055</p> <p>(22) International Filing Date: 30 October 1998 (30.10.98)</p> <p>(30) Priority Data:<br/>60/063,574 30 October 1997 (30.10.97) US</p> <p>(71)(72) Applicant and Inventor: KING, Christopher, R. [US/US];<br/>7508 Wood Court, Fishers, IN 46038 (US).</p> |           | <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b><br/><i>Without international search report and to be republished upon receipt of that report.</i></p> |

(54) Title: AUTOMATED HAIR ISOLATION AND PROCESSING SYSTEM

## (57) Abstract

This invention is a device that when run through hair on the human head isolates hairs in groups of one or relatively few. Once hairs are isolated in separate areas, they are then processed in various ways, usually to beautify them, that would not be possible if they were not isolated. These beautification processes are, not limited to, but include attaching one or a very few hair extensions to one or a very few scalp hairs, reshaping the cross-sectional diameters of individual scalp hairs, automating a precise haircutting process which cuts small groups of hairs to carefully controlled-lengths, applying hair colorants including those that work best if only applied to one or a very few hairs at a time, applying hair permanent curling chemicals to hair followed by a protective coating that prevents escape of said chemicals and acts as a fixation means holding hairs in place during chemical processing so that other fixation means such as hair curlers don't have to be used. In order to aid the entrance of hairs into the isolation processing system, a mechanism referred to as a tensioning hair straightener is described. It allows hairs to stand in a more perpendicular manner relative to the scalp during processing. Also, various means of preventing hairs from building up in front of a processing system which is advancing over the scalp are discussed. For the hair extension attachment embodiment, a system for the removal of attached hairs from the scalp and recycling them so that they can be reattached to the scalp is discussed. Finally, means of manufacturing artificial hair extensions that look and behave like real human hairs and putting them into cartridges that can be used by the attachment system are discussed.



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